

Whitmore's disease: an uncommon urological infectious disease

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Introduction

Melioidosis is one of the rare infectious diseases in humans, and it is caused by a gram-negative bacteria called *Burkholderia pseudomallei* [1]. This infectious disease is common in Australia and Southeast Asia; however, the number of newly reported cases in Sri Lanka has increased over recent years [2]. The spectrum of disease can affect any organ in the body, and it can range from pure benign skin and soft tissue infections to fatal septicemia. Isolated prostate abscess due to melioidosis is uncommon. This case scenario aims to share our experience in the identification and management of primary melioidotic prostatic abscesses.

Case presentation

A 40-year-old Sri Lankan male presented at the ward with complaints of fever, dysuria, increased frequency, mild hematuria, and suprapubic pain. He had been diabetic for five years with poor compliance with medication. Other than that, there was no history suggestive of urethral instrumentation, trauma, and similar recurrent presentation. Examination revealed that he was febrile and had a tender boggy in the right lobe of the prostate during the digital rectal examination. The full urine report showed the presence of pus and red blood cells, and the inflammatory markers were elevated in the serum (White blood cells $20.5 \times 10^9/L$, C- Reactive protein 234 mg/L, ESR- 70mm/hr). Initial ultrasound imaging of the pelvis revealed an enlarged prostate with possible abscess formation. Subsequently, magnetic resonance imaging (MRI) was requested, and it showed the large prostate abscess (3cm x 4cm x5cm) in the right lobe, which also extends into the left lobe (Figure 1).

After that, he underwent transrectal ultrasound-guided aspiration of the prostate abscess, which was positive for the *Pseudomonas* species. At meanwhile, the sample was screened for melioidosis, and the test result was positive. The

microbiology team reviewed him, and the intravenous cefotaxime 1g eight hourly was started for melioidosis. It had been continued for four weeks of duration, according to the microbiologist's opinion. The contrast-enhanced computed tomogram (CECT) of the chest, abdomen, and pelvis was arranged to exclude the rest of the organ involvement, and the study revealed no other foci of infection. Therefore, the diagnosis concluded as isolated primary prostatic melioidosis.

He was discharged after one month with oral augmentin 625 mg for another six weeks of duration. Follow-up ultrasound scans showed a significant reduction in the abscess cavity size at six weeks and no evidence of recurrence for one year.

Discussion

The etiologic agent of Whitmore's disease is a gram-negative anaerobic bacillus which was classified as *Pseudomonas* group previously. Initially, Captain A Whitmore found this bacteria, and the term melioidosis was derived later by Stanton and Fletcher in 1921 [2].

B. Pseudomallei is usually found in the environmental saprophytes and enters the human body by various methods such as inhalation, skin penetration, and laboratory acquisition. Therefore, it mainly affects the people who have regular contact with water and soil [3]. The main risk factors for this infection include male sex, diabetes mellitus, liver diseases, chronic kidney disease, and long-term lung diseases [4].

Melioidosis has a broad spectrum of clinical presentation as it can affect any part of the body. The lung is the most affected organ in the body and presents as pneumonia or lung abscess. It can also affect the organs of the genitourinary system, and they may present as pyelonephritis, renal abscess, prostatitis, epididymo-orchitis, and scrotal abscess [3]. However, an isolated prostate infection is a rare form of presentation, and it can present as benign prostatic hyperplasia or prostatitis. The affected patients may have high spike fever with lower urinary tract symptoms like in our case scenario. Rectal examination guides us to the prostatic involvement by the marked pelvic tenderness and prostatic boggy.

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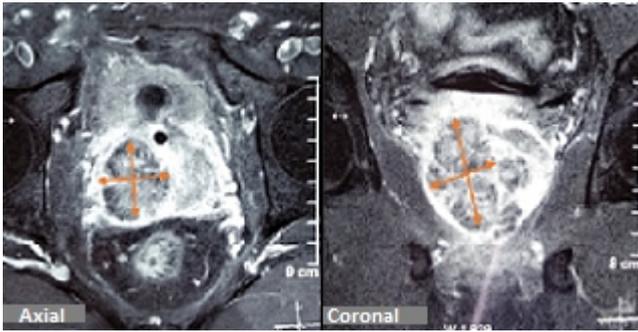


Figure 1. MRI prostate (Axial and Coronal views) showed the multiloculated prostate abscess in the right lobe which was marked by orange arrows.

The transrectal ultrasound is indicated in suspected cases to support the diagnosis. It shows the affected site, number and size of the lesions, and abscess formation. Computed tomography or magnetic resonance imaging is also helpful in defining the anatomy of the lesion, and it can exclude the rest of the organ involvement [5]. Definitive diagnosis requires the isolation of *B. pseudomallei* in culture from clinical specimens.

Small abscess cavities (< 1cm) can be resolved entirely with antibiotic treatment, but large abscesses need some form of drainage procedures such as needle aspiration or open techniques (transurethral, transrectal, transperineal). Among those, needle aspiration is a safe and straightforward technique, and it can be reproducible if indicated. Usually, *B. pseudomallei* is sensitive to ceftazidime, amoxicillin-clavulanic acid, doxycycline, co-trimoxazole, and meropenem. The entire course of antibiotic treatment is recommended for 12-20 weeks despite drainage procedures [4].

There were few studies documented in the literature related to prostate melioidosis. Morse et al. published a 19 years study in melioidosis cases in Australia and found 81 were associated with prostate abscess. Seventy-five cases had clinical evidence of prostate infection, all treated with antibiotics, and 57 abscesses drained [1].

Conclusion

Urologists and primary care physicians should have a clinical suspicion of this infection in patients with prostate abscesses. The microbiology team should see and screen if the prostate abscess has an abnormal resolution course with usual treatment options.

All authors disclose no conflict of interest. The study was conducted in accordance with the ethical standards of the relevant institutional or national ethics committee and the Helsinki Declaration of 1975, as revised in 2000.

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Learning Points:

- All primary care physicians and urologists should be aware of the melioidosis infection in patients with pyogenic infection.
- The prostate abscess should be screened for melioidosis if it has a poor response to the usual antibiotics.
- Patient compliance and microbiology team involvement are mandatory to resolve abscesses and prevent a recurrence.